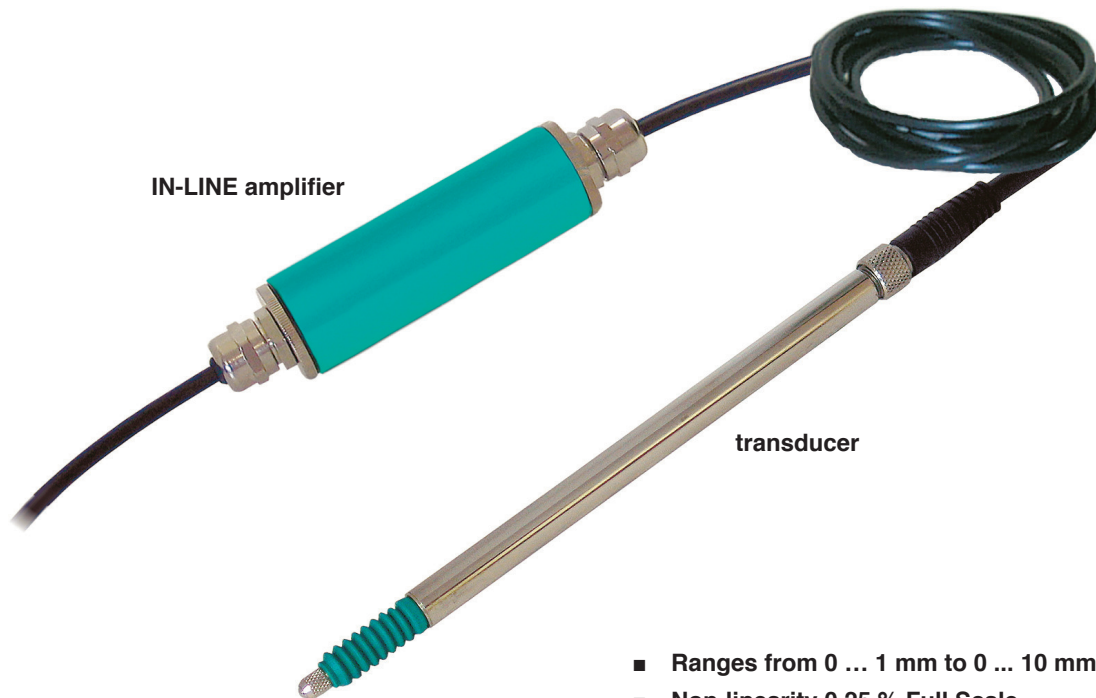


# LVDT Transducer with IN-LINE Amplifier

Model 8739

Code:	8739-E
Manufacturer:	burster
Delivery:	ex stock/4 weeks
Warranty:	24 months



IN-LINE amplifier

transducer

- Ranges from 0 ... 1 mm to 0 ... 10 mm
- Non-linearity 0.25 % Full Scale
- Transducer diameter 8 mm
- Vibration-free and wear resistant
- Output 0 ... 10 V
- Transducer without IN-LINE amplifier upon request

## Application

Inductive displacement transducers of this series measure linear displacements and indirectly all mechanical values convertible into distances by additional equipment (i.e. tension and compression forces, extension, torque, vibration).

The sensor body equipped with a connector has an outer diameter of only 8 mm and therefore is especially well suitable for the integration in dimensionally restricted structures.

Typical application fields are displacement and extension measurements on

- Machines
- Servo systems
- Motor vehicles
- Test benches
- Production plants

## Description

The cylindrical case made of stainless steel, houses a differential transformer (LVDT). It consists of a primary and two secondary coils with axially movable cores.

A displacement of this core changes the magnetic induction of the coils. The IN-LINE carrier frequency amplifier converts the displacement into a direct proportional electrical DC voltage.

The transducer is constructed as a probe at which within the measuring range a spring pushes the probe tip towards the measuring object. Bellows protect the mechanical guidance of the probe tip against pollution. The IN-LINE amplifier is integrated in the connector cable and adjusted to the transducer specifically. Both components form a unit while they can be separated for mounting purposes (miniature plug connection at the transducer). The sensor body is separated galvanically from the supply and the measuring signal.

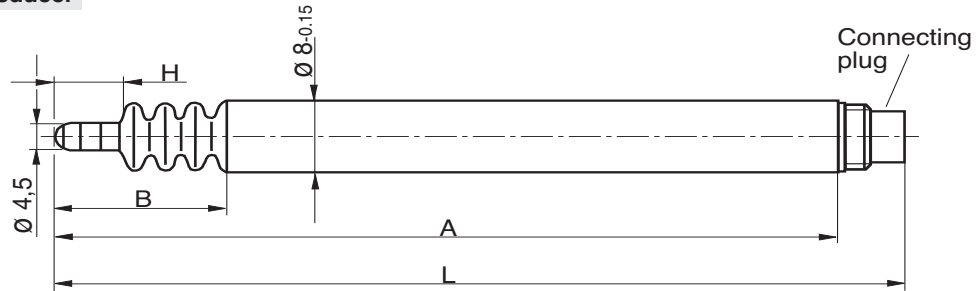
The use of not harmonized components may lead to increased errors of measurement.

**Technical Data**

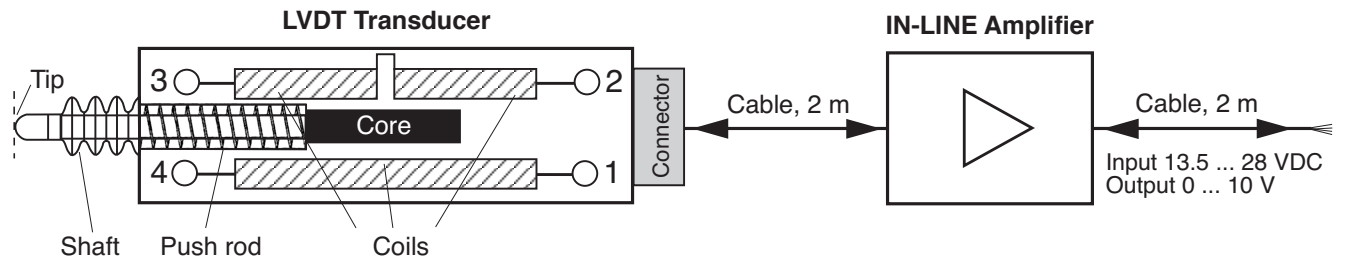
Order Code	Measuring Range	Dimensions [mm]				Maximum Frequency [Hz]	Tip Force at Full Scale max.[N]	Weight [g]
		L	A	B	H*			
8739-5001-V501	0 ... 1 mm	103	97.5	15,5	4	100	2.3	25
8739-5002-V501	0 ... 2 mm	103	97.5	15.5	4	100	2.3	25
8739-5005-V501	0 ... 5 mm	140	130	23.0	7	100	2.3	35
8739-5010-V501	0 ... 10 mm	146	140	27.0	11	100	3.3	40

\* Total distance H (hub): pre distance 1 mm + measuring range + end distance 1 mm.  
The output voltage on the start distance is < zero V and > 10 V on the end distance.

**Technical Drawing Transducer**



**Figure of Function**



**Electrical Values**

Supply voltage (protected against wrong polarity): 13.5 ... 28 VDC  
 Current input: < 30 mA  
 Output voltage for measuring range: 0 ... +10 V  
 Ripple: approx. 20 mV<sub>pp</sub>  
 Terminal impedance: 1 kΩ  
 Recommended load resistor: about > 1 MΩ

Electrical connection: shielded, PVC-insulated wire, total length 4 m, the IN-LINE amplifier is axially and inseparably mounted, bending radius ≥ 10 mm, once open-end, the other end is equipped with a 4-PIN connector to sensor  
 Assembly: Fixation of the sensor by clamping  
 Pin-assignment: Supply-line of IN-LINE amplifier brown  
 Supply voltage .....brown  
 Output voltage .....green  
 GND/Supply/Output .....white  
 Shielding .....copper

**Environmental Conditions**

Working temperature range (incl. amplifier): - 20 °C ... 80 °C  
 Influence of temperature: 0.03% F.S./K  
 A strong magnetic field influences the measuring signal (remanence effect).

**Order Code**

**Inductive transducer** with a measuring range of 0 ... 5 mm **Model 8739-5005-V501**  
 including IN-LINE amplifier 0 ... +10 V, analog output

**Mechanical Values**

Non-linearity: ± 0.25 % F.S.  
 Hysteresis: ± 0.01 % F.S.  
 Non-repeatability: ± 0.1 % F.S.  
 Push rod: running in ball-bearings  
 Measuring tip: thread M 2.5  
 Case material of sensor body: ST 25, nickel-plated  
 Case material IN-LINE amplifier: plastic  
 Protection class of transducer: IP 60  
 Protection class of IN-LINE amplifier: IP 65  
 Dimensions of IN-LINE amplifier: 50 x 38 x 14 [mm]

**Accessories**

**Connector, 12-PIN,** Matching to all burster desktop instruments **Model 9941**

**Connector, 9-PIN, Min-D for DIGIFORCE® 9310** **Model 9900-V209**

Upon connection the transducer to DIGIFORCE® 9310, display version an external supply voltage is necessary (model 8739-....-V505 resp. -V506)

**Installation of connector to cable** **Model 99004**

Power supply equipment, digital indicators and process supervisory device e.g. digital display 9180, DIGIFORCE® Model 9306  
**see section 9 of the catalog.**

**Option**

**Works Calibration (WKS)**

Calibration of sensor with or without indicator in 20 % steps (6 reading points).